

REMARKS

The Examiner makes the previous restriction requirement dated November 2, 2006 final, and requires that non-elected claims 1, 2, 4-8, and 13-18 be canceled; rejects claims 9-12 and 19-23 under 35 U.S.C. § 112, second paragraph, as being indefinite; rejects claims 19-22 under 35 U.S.C. § 101, as being drawn to non-statutory subject matter; and rejects claims 9-12 and 19-23 under 35 U.S.C. § 102(e) as being anticipated by FERGUSON et al. (U.S. Patent No. 6,798,777). Applicants respectfully traverse the rejections.¹

Applicants cancel claims 1, 2, 4-8, and 13-18 without prejudice or disclaimer, and amend claims 9-12 and 19-23 to improve form. No new matter has been introduced. Claims 9-12 and 19-23 are pending.

35 U.S.C. § 112, Second Paragraph Rejection

Claims 9-12 and 19-23 stand rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to point out and distinctly claim the subject matter which Applicants regard as the invention (final Office Action, p. 3). Specifically, the Examiner asserts that particular claim language renders the claims “unclear” (final Office Action, pp. 3-4). Applicants respectfully traverse the rejection.

While not acquiescing in the Examiner’s rejection, but merely to expedite prosecution, claims 9-12 and 19-23 are amended improve form and more clearly define the claimed subject matter.

¹ As Applicants’ remarks with respect to the Examiner’s rejections overcome the rejections, Applicants’ silence as to certain assertions by the Examiner in the Office Action or certain requirements that may be applicable to such rejections (e.g., whether a reference constitutes prior art, motivation to combine references, assertions as to dependent claims, etc.) is not a concession by Applicants that such assertions are accurate or that such requirements have been met, and Applicants reserve the right to dispute these assertions/requirements in the future.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 9-12 and 19-23 under 35 U.S.C. § 112, second paragraph.

35 U.S.C. §101 Rejection

Claims 19-22 stand rejected under 35 USC §101 as allegedly being drawn to non-statutory subject matter. Specifically, the Examiner asserts that claims 19-22 merely recite a number of elements “for doing a certain function but do not perform these functions,” i.e., “without producing any tangible result” (Final Office Action, pp. 5-6). Applicants respectfully traverse the rejection.

While not acquiescing in the Examiner’s rejection, but merely to expedite prosecution, claims 19-22 are amended to improve form and more clearly define the claimed subject matter.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 19-22 under 35 U.S.C. § 101.

35 U.S.C. §102 Rejection

Claims 19-12 and 19-23 stand rejected under 35 USC §102(e) as allegedly anticipated by FERGUSON et al. Applicants respectfully traverse the rejection.

A proper rejection under 35 U.S.C. § 102 requires that a single reference teach every aspect of the claimed invention. Any feature not directly taught must be inherently present. In other words, the identical invention must be shown in as complete detail as contained in the claim. See M.P.E.P. § 2131. FERGUSON et al. does not disclose each and every feature recited in claims 19-12 and 19-23.

Independent claim 9, as amended, is directed to a method for routing packets received at

a network device. The method includes converting the packets into a plurality of data structures; forwarding, using forwarding logic of the network device, the data structures to a plurality of processing engines of the network device; processing, by one of the processing engines, a first data structure relating to one of the packets; halting the processing of the first data structure when first processing information is needed to continue the processing of the first data structure and initiating processing of a second data structure; halting the processing of the second data structure when either second processing information is needed to continue the processing of the second data structure or the first processing information is obtained by the one processing engine; monitoring, by a monitor of the network device, a processing state of the one processing engine to identify partial processing results based on the halted processing of the first data structure in advance of the identified need for the first processing information; performing, at the one processing engine, a route lookup for the first data structure using the partial processing results; modifying, at the one processing engine, the first data structure based on the route lookup; and routing, using a switch fabric of the network device, the one packet based on the modified data structure. FERGUSON et al. does not disclose this combination of features.

For example, FERGUSON et al. does not disclose or suggest halting processing, by one processing engine, of a first data structure when first processing information is needed to continue the processing of the first data structure and initiating processing of a second data structure; halting the processing of the second data structure when either second processing information is needed to continue the processing of the second data structure or the first processing information is obtained by the one processing engine; monitoring a processing state of the one processing engine to identify partial processing results based on the halted processing of the first data structure in advance of the identified need for the first processing information, as

required by claim 9. The Examiner cited col. 2, line 64 – col. 3, line 11 of FERGUSON et al., as support for the rejection of claim 9 (final Office Action, pp. 6-7). Applicants respectfully traverse.

Col. 2, line 64 – col. 3, line 11 of FERGUSON et al. recites:

In another aspect the invention provides a method for performing a lookup in a switching device. The method includes identifying a first lookup operation in a sequence of lookup operations to be performed on a packet, executing the first lookup operation including returning a result that is a pointer to a subsequent lookup operation in the sequence, executing the subsequent lookup including returning a result that is a pointer to a next lookup operation in the sequence, continuing to execute lookup operations in the sequence until a lookup operation in the sequence returns a result that indicates that no more operations are to be processed and when a result indicates that no more operations are to be processed, returning a notification to the switching device that includes routing information for the routing of the packet through the switching device.

This portion of FERGUSON et al. discloses a lookup method that includes executing a lookup operation in a sequence of lookup operations to be performed on a packet, including returning a result that is a pointer to a subsequent lookup operation in the sequence, continuing to execute lookup operations in the sequence until a lookup operation in the sequence returns a result that indicates that no more operations are to be processed. Nowhere in this portion, or elsewhere, does FERGUSON et al. disclose halting processing, by one processing engine, of a first data structure when first processing information is needed to continue the processing of the first data structure and initiating processing of a second data structure; halting the processing of the second data structure when either second processing information is needed to continue the processing of the second data structure or the first processing information is obtained by the one processing engine; monitoring a processing state of the one processing engine to identify partial processing results based on the halted processing of the first data structure in advance of the identified need for the first processing information, as required by amended claim 9.

For at least the foregoing reasons, Applicants submit that claim 9, as amended, is not anticipated by FERGUSON et al.

Claims 10-12 depend from claim 9 and are, therefore, not anticipated by FERGUSON et al. for at least the same reasons given with respect to claim 9.

Independent claim 19, as amended, is directed to a system for performing concurrent route lookups for processing a plurality of data items, where the system includes a data processing portion that processes one of the data items and submits a data request to a memory that stores information needed for the processing, wherein the data request halts the processing of the one data item and initiates the processing of another one of the data items; a control state portion that monitors operation of the data processing portion by receiving state information related to a partial processing result produced from the halted processing of the one data item by the data processing portion based on a prospective request for the stored information; a buffer that stores the partial processing result; and a controller that loads the partial processing result from the data processing portion into the buffer and inputs the other data item into the data processing portion for processing while the requested data is obtained for the one data item, wherein the data processing portion resumes the processing of the one data item in an order that differs from an order in which the processing of the one data item was halted. FERGUSON et al. does not disclose this combination of features.

For example, FERGUSON et al. does not disclose or suggest a data processing portion that processes one of the data items and submits a data request to a memory that stores information needed for the processing, wherein the data request halts the processing of the one data item and initiates the processing of another one of the data items; a control state portion that monitors operation of the data processing portion by receiving state information related to a

partial processing result produced from the halted processing of the one data item by the data processing portion based on a prospective request for the stored information. The Examiner cited col. 2, line 64 – col. 3, line 11 of FERGUSON et al., as support for the rejection of claim 19 (final Office Action, p. 8). Applicants respectfully traverse.

Col. 2, line 64 – col. 3, line 11 of FERGUSON et al. is reproduced above. This portion of FERGUSON et al. discloses a lookup method that includes executing a lookup operation in a sequence of lookup operations to be performed on a packet, including returning a result that is a pointer to a subsequent lookup operation in the sequence, continuing to execute lookup operations in the sequence until a lookup operation in the sequence returns a result that indicates that no more operations are to be processed. Nowhere in this portion, or elsewhere, does FERGUSON et al. disclose a data processing portion that processes one of the data items and submits a data request to a memory that stores information needed for the processing, wherein the data request halts the processing of the one data item and initiates the processing of another one of the data items; a control state portion that monitors operation of the data processing portion by receiving state information related to a partial processing result produced from the halted processing of the one data item by the data processing portion based on a prospective request for the stored information, as required by amended claim 19.

For at least the foregoing reasons, Applicants submit that claim 19 is not anticipated by FERGUSON et al.

Claims 20-22 depend from claim 19 and are, therefore, not anticipated by FERGUSON et al. for at least the same reasons given with respect to claim 19.

Independent claim 23, as amended, is directed to a system that includes means for processing data structures and requesting information from an external source when the

information is projected to be needed to accomplish the processing of the data structures, wherein the requesting suspends a processing of one of the data structures to form partial processing results and initiates a processing of another one of the data structures; and means for monitoring operation of the means for processing via state information associated with the partial processing results produced by the means for processing. FERGUSON et al. does not disclose this combination of features.

The Examiner cited col. 2, line 64 – col. 3, line 11 of FERGUSON et al., as support for the rejection of claim 23 (final Office Action, p. 9). Applicants respectfully traverse.

Col. 2, line 64 – col. 3, line 11 of FERGUSON et al. is reproduced above. This portion of FERGUSON et al. discloses a lookup method that includes executing a lookup operation in a sequence of lookup operations to be performed on a packet, including returning a result that is a pointer to a subsequent lookup operation in the sequence, continuing to execute lookup operations in the sequence until a lookup operation in the sequence returns a result that indicates that no more operations are to be processed. Nowhere in this portion, or elsewhere, does FERGUSON et al. disclose means for processing data structures and requesting information from an external source when the information is projected to be needed to accomplish the processing of the data structures, wherein the requesting suspends a processing of one of the data structures to form partial processing results and initiates a processing of another one of the data structures; and means for monitoring operation of the means for processing via state information associated with the partial processing results produced by the means for processing, as required by amended claim 23.

For at least the foregoing reasons, Applicants submit that claim 23 is not anticipated by FERGUSON et al.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 9-12 and 19-23 under 35 USC §102(e) based on FERGUSON et al.

CONCLUSION

In view of the foregoing amendments and remarks, Applicants respectfully request the Examiner's reconsideration of the application and the timely allowance of pending claims 9-12 and 19-23.

If the Examiner believes that the application is not now in condition for allowance, Applicants respectfully request that the Examiner contact the undersigned to discuss any outstanding issues.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1070 and please credit any excess fees to such deposit account.

Respectfully submitted,

HARRITY SNYDER, L.L.P.

By: /Garth D. Richmond/
Garth D. Richmond
Registration No. 43,044

Date: May 29, 2007

11350 Random Hills Road
Suite 600
Fairfax, Virginia 22030
(571) 432-0800